

REMARKS/ARGUMENTS

Claims 1-6, 8-12 and 14-15 are pending in the application.

The Examiner has rejected claims 1, 2, 10, 12, and 14 under 35 USC 103(a) as being unpatentable over Rice et al. (PCT Pub No. WO 96/27787) in view of Gianazza et al. (Gianazza et al., "Formulations for Immobilized pH Gradients including pH Extremes", Electrophoresis, Vol. 10, pp 806-808 (1989)). Specifically, the Examiner cites Rice for the disclosure of certain elements for a membrane loader for gel electrophoresis, and concedes that "RICE does not explicitly teach an acidic interval IPG gel as a pre swollen gel". He then cites Gianazza for its "teaching of formulations of acidic interval IPG gels ... where the gels are swollen for use".

In response Applicants disagree and respectfully assert that the Rice reference does not disclose the instant invention. Specifically, Applicants dispute the Examiner's contention that hydrophilic support is "derivatized with positively charged ion groups" as recited in the instant claims. As support for this, the Examiner cites page 6, lines 17-19 of Rice, which merely states that "samples may be loaded into the by applying the samples to the membranes of the present sample loader, and inserting the sample loader into the sample wells", which sample wells are performed by "prior art well forming combs" (see pg 6, line 16). The samples are loaded into the wells by activating the gel with a release mechanism" (pg 6, lines 20-21). The various release mechanisms which can be used are described at pg 6, lines 5-13, and include "application of an electric field" as well as exposure of the buffer solution to "radiation, light, sonic waves, electromagnetic

radiation, particle bombardment, and any other means...". However, at no time does Rice disclose that the membrane must be derivatized with positively charged groups. Indeed, this derivatization is key to the benefits of the instant invention (see, e.g., pages 3 and 5 of the captioned application).

The addition of the Gianazza reference does nothing to remedy this deficiency of Rice. Indeed, Rice merely discloses a number of formulations suitable for immobilized pH gradients. It discloses nothing about sample loading or application to the gel.

In view of the foregoing, Applicants respectfully assert the Examiner's rejections cannot be sustained and should be withdrawn.

The Examiner has rejected claims 3-6, 8, 9, 11, and 15 under 35 USC 103(a) as being unpatentable over Rice in view of Gianazza, and further in view of Carlsson et al. (US Pat. No. 6,528,322). Specifically, the Examiner cites Rice and Gianazza as discussed above, and states that "Rice teaches the support can be positively charged, which one of skill in the art would know could be obtained by cation groups". He then cites Carlsson for its disclosure of "a method and apparatus for the separation of analytes via a matrix, wherein it is taught that a ligand/structure can be introduced in the matrix ... where the ligand/structure comprise ion exchange functional groups", concluding "it would have been obvious to one of ordinary skill in the art to modify the method as taught by Rice in functionalizing the support with quarternary aminoethyl and diethyl aminoethyl as taught by CARLSSON because it would provide the positively charged surface that RICE recites for the support."

In response, Applicants respectfully disagree and reiterate that Rice does not disclose derivatization of the membrane to achieve any desired result, nor does Rice disclose any requirement to have a positively charged membrane. Indeed, the only disclosure Applicants can find in Rice with regard to the net charge of the membrane is that the preferred membranes can be constructed of “nylons that may either be electrically neutral or positively or negatively charged” (page 14, lines 4-5). Coupling this with the wide array of release mechanisms that can be employed to remove the sample (see, e.g. pg 6, lines 5-13 and pg 9, line 25-pg 10, line 2), and Applicants respectfully assert that Rice does not recite the support to be positively charged (or charged at all), but merely notes that it might be charged (positively or negatively) or be neutral.

Thus Applicants respectfully submit that the Examiner’s suggestion that one skilled in the art would be motivated to functionalize the membrane of Rice with the groups disclosed by Carlsson is in error. Indeed, Applicants also respectfully submit that the Carlsson reference does not even refer to sample application, but discloses these groups for use in conjunction with the flow matrix, which further distinguishes its disclosure from that of Rice.

In view of the foregoing, Applicants respectfully assert the Examiner’s rejections cannot be sustained and should be withdrawn.

Applicants assert that the claims are in allowable form and earnestly solicit the allowance of claims 1-6, 8-12 and 14-15.

Early and favorable consideration is respectfully requested.

Respectfully submitted,

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